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24 March 1994

UNISYS

Library Capability Demonstration

Central Archive for Reusable Defense Software (CARDS)

Informal Technical Data

CARDS

Central Archive for Reusable Defense Software

STARS-VC-B018/004/00
24 March 1994

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INFORMAL TECHNICAL REPORT
For The
SOFTWARE TECHNOLOGY FOR ADAPTABLE, RELIABLE SYSTEMS
(STARS)

Library Capability Demonstration
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(CARDS)

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Air Force Material Command, USAF
Hanscom AFB, MA 01731-2816

Prepared by:

Electronic Warfare Associates, Inc.
under contract to
Unisys Corporation
12010 Sunrise Valley Drive
Reston, VA 22091

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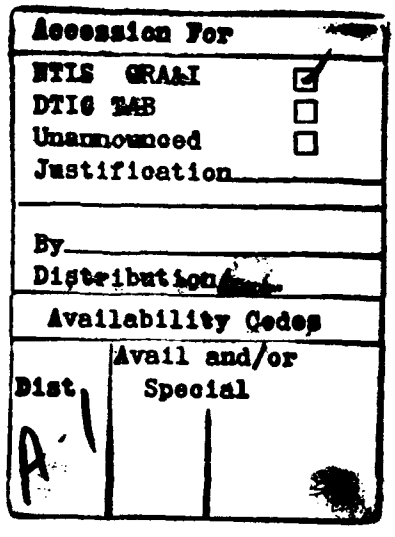

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Library Capability Demonstration
Central Archive for Reusable Defense Software
(CARDS)

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Approvals:

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(Signatures on File)

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Library Capability Demonstration
Central Archive for Reusable Defense Software
(CARDS)

ABSTRACT

This is the fourth library capability demonstration under this contract. Each demonstration provides information about the Central Archive for Reusable Defense Software (CARDS) operational library capabilities.

The goals of this demonstration are to show how CARDS:

- Made the Command Center Library (CCL) model easier to navigate.
- Made the CCL model easier to conceptualize.
- Made the CCL model more maintainable.
- Improved the CCL performance in the Reuse Library Framework (RLF) Graphical Browser.

Table of Contents

1 OVERVIEW

This document provides the material used to demonstrate the Central Archive for Reusable Defense Software (CARDS) Program's operational library capabilities. The actual demonstration was given to the Air Force Program Manager on March 24, 1994 during the scheduled Program Management Review.

The goals of this demonstration are to show how CARDS:

- Made the Command Center Library (CCL) model easier to navigate.
- Made the CCL model easier to conceptualize.
- Made the CCL model more maintainable.
- Improved the CCL performance in the Reuse Library Framework (RLF) Graphical Browser (GB).

The demonstration was presented in two parts:

- A briefing (see Appendix A) of what was presented.
- The actual demonstration script (see Appendix B) to show current capabilities.

APPENDIX A - LIBRARY CAPABILITY DEMONSTRATION BRIEFING SLIDE

The following pages are the slides used to explain the library capability demonstration.

Central Archive for Reusable Defense Software (CARDS)

Library Capability Demonstration
CDRL: B018
STARS-VC-B018/004/00

24 March 1994

Dan Nichols
EWA, Inc.

Team Members

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Karen Fleming, SBI
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Paul Kogut, Unisys
Dan Nichols, EWA
Nancy Solderitsch, Unisys
Kurt Wallnau, Unisys
Roger Whitehead, DSD

Goals

Make the Command Center Library (CCL) model easier to navigate;

Make the CCL model easier to conceptualize;

Improve the performance of the CCL in the RLF Graphical Browser; and

Make the CCL model more maintainable.

Design Objectives

Don't lose current information and capabilities;

Create a user-understandable view by keeping logically related information in one place;

Allow for growth; and

Allow for parallel development.

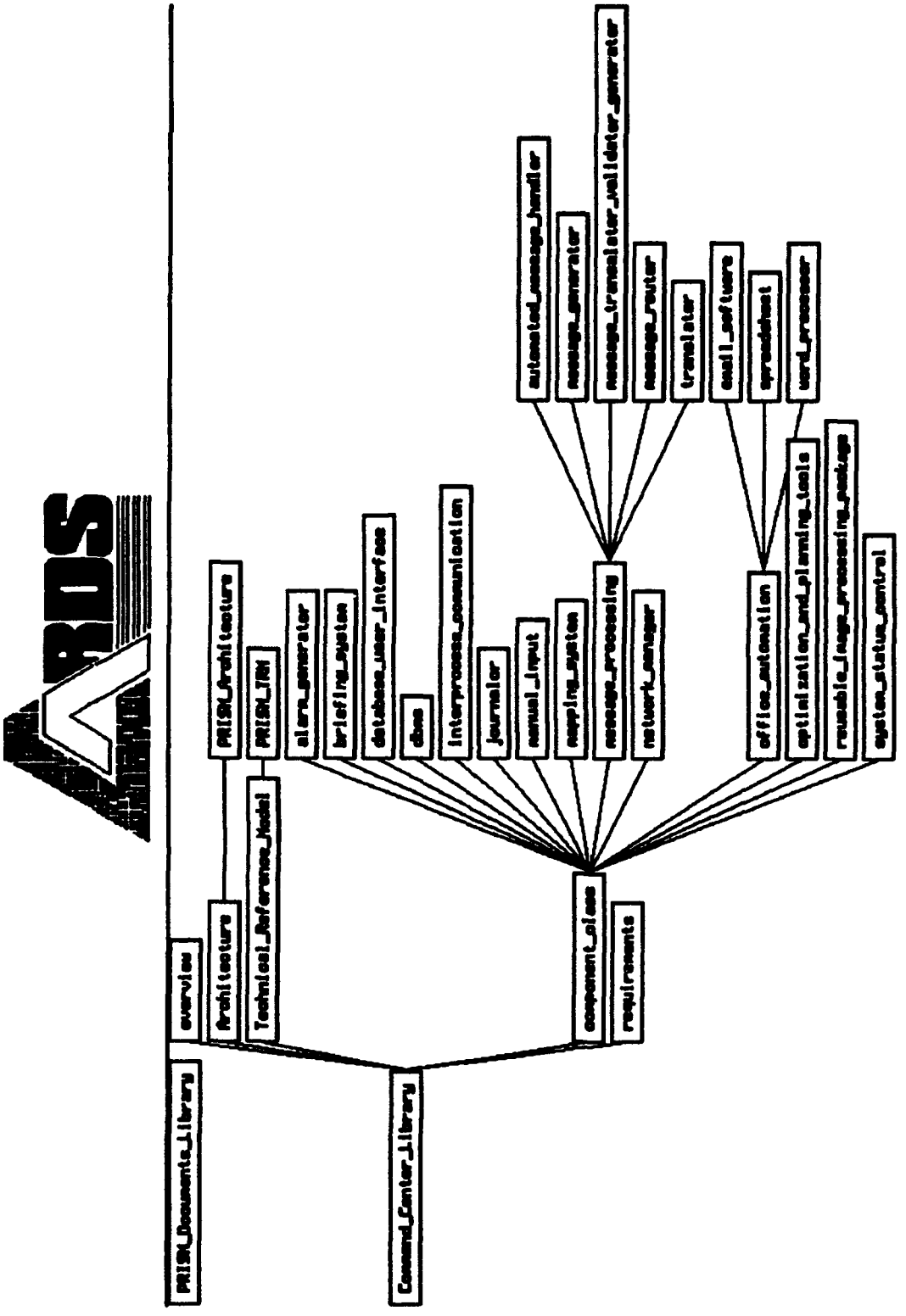
Approach

Discuss alternative approaches to partitioning based on our objectives.

Partition the model as follows:

- **An *Overview* model:**
  - An overview of the entire CCL model structure;
  - An architecture-centric view of the model; and
  - Links to the *Requirements* and component class models.
- **A *Requirements* model:**
  - DISA CCDH and TACE requirements and
  - Links to the component class models.
- **Separate models for each component class:**
  - All categories and objects referenced by the particular component class and
  - Some necessary context information.

Review the resulting models.


PRISM_Documentation_Library
overview
Architecture
Technical_Reference_Model
PRISM_Architecture
PRISM_LRM
Command_Center_Library
component_views
requirements
alarm_generator
briefing_agenda
database_user_interface
dbms
interprocess_communication
journaler
manual_input
mapping_system
message_processing
network_manager
automated_message_handler
message_generator
message_translator_validator_generator
message_router
translator
office_automation
optimization_and_planning_tools
reusable_image_processing_package
system_status_control
mail_software
spreadsheet
word_processor

Current Status

Models for the *Overview*, *Requirements* and component class libraries;

Action to open new models from within the RLF Browser;

Launcher which allows direct access to all library models;

Capability to launch models from the PRISM Architecture picture; and

All previously existing capabilities with the exception of system composition.

Current Work and Next Steps

Address the style conventions identified during this activity;

Complete modeling for classes with qualified components:

- **Database Management Systems and**
- **Word Processor.**

Incorporate Ada "with" like mechanism to address shared model nodes;

Incorporate model manager mechanism;

Finish fixes for System Composition;

Current Work and Next Steps (continued)

Testing:

- **Generate test plans for new model version and**
- **Begin testing of new model version.**

Create a developmental version of distributed CCL for evaluation;

Demonstrate this implementation of the library at STC; and

Planning for an April/May release for Version 4.0 of the CCL.

Benefits Achieved

Models open significantly faster in RLF Graphical Browser;

Smaller, more understandable models;

Style conventions applied have made the model more consistent;

Already allowing for parallel development; and

Newer team members have gained a solid understanding of the CCL Model and modeling techniques.

APPENDIX B - LIBRARY CAPABILITY DEMONSTRATION SCRIPT

The following contains the demonstrator's computer script used to demonstrate the CARDS library capabilities.

1. Highlights

   A. New launcher

   B. Action to open models

   C. Hotspots in picture

   D. Partitioned model

   E. Component Qualification

2. Show new launcher and new launch model action

   <activate launcher via Run.sh>

   - To show new launcher allowing more direct access.
   - RLF GB type representation.
   - Ability to launch all models from within it.
   - Ability to view descriptions.

   <overview>.<View_Model>

3. Show hotspots in architecture

   <cc_overview>

   <Navigate>.<Go To a Child>.*<Architecture>*

   <PRISM_Architecture>.<Display Relationships Graphically>

   - Model of PRISM Architecture

   <Quit>.<Delete Current View>

   <PRISM_Architecture>.<Perform Action>.<Picture Image>

- Shows new hotspots capability.
- Will launch one of the models via the hotspot.

<Click on BRIEFING PREPARATION/PRESENTATION>

- Opens *cc_briefing_system* model
- Will talk about it later...

<cc_briefing_system>.<Quit>.<Quit Browser Session>

<PRISM Picture>.<File.Quit>

4. Show Requirements model

<Navigate View>.<Go To Root Node>

<cc_overview>.<Navigate>.<Go To A Child>.*<requirements>*

<requirements>.<Perform Action>.<Launch Model>

- Opens *cc_requirements* model.
- Will be showing a specific requirement and how to get to a component model from it.

<cc_requirements>.<Navigate>.<Go To a Child>.*<requirement>*

<requirement>.<Navigate>.<Go To a Child>.*<DISA_CCDH_item>*

<DISA_CCDH_item>.<Navigate>.<Go To a Child>.*<function>*

<situation_assessment>.<Display Relationships Graphically>.

- scroll down to *has_ops_intell_briefing*
- scroll to right of view

<briefing_system>.<Perform Action>.<Launch Model>

- Ability to open model from requirements and architecture viewpoint.
- Was able to do the same from the picture.

5. Partitioned model

   <cc_briefing_system>

   <briefing_system>.<Display Relationships Graphically>

6. System Composition

   <cc_overview>

   <Navigate View>.<Go To a Node>.*<mapping_system>*

   <mapping_system>.<Perform Action>.<Launch Model>

   <cc_mapping_system>.<Navigate View>.<Go to a node>.*<mapping_system>*

   <mapping_system>.<Perform Action>.<Qualify Component>

   - Start at step 2.
   - Component name will be ***PMRMapping***.